

Making E/R Models

- To make an E/R model you need to identify
 - Entities
 - Attributes
 - Relationships
 - Cardinality ratios
- from a description
- General guidelines
 - Since entities are things or objects they are often nouns in the description
 - Attributes are facts or properties, and so are often nouns also
 - Verbs often describe relationships between entities

Example

A university consists of a number of departments. Each department offers several courses. A number of modules make up each course. Students enrol in a particular course and take modules towards the completion of that course. Each module is taught by a lecturer from the appropriate department, and each lecturer tutors a group of students

Example - Entities

A university consists of a number of **departments**. Each department offers several **courses**. A number of **modules** make up each course. **Students** enrol in a particular course and take modules towards the completion of that course. Each module is taught by a **lecturer** from the appropriate department, and each lecturer tutors a group of students

Example - Relationships

- A university consists of a number of departments. Each department **offers** several courses. A number of modules **make up** each course. Students **enrol in** a particular course and **take** modules towards the completion of that course. Each module is **taught by** a lecturer **from the** appropriate department, and each lecturer **tutors** a group of students

Example - E/R Diagram

Entities: Department, Course, Module, Lecturer, Student

Department

Course

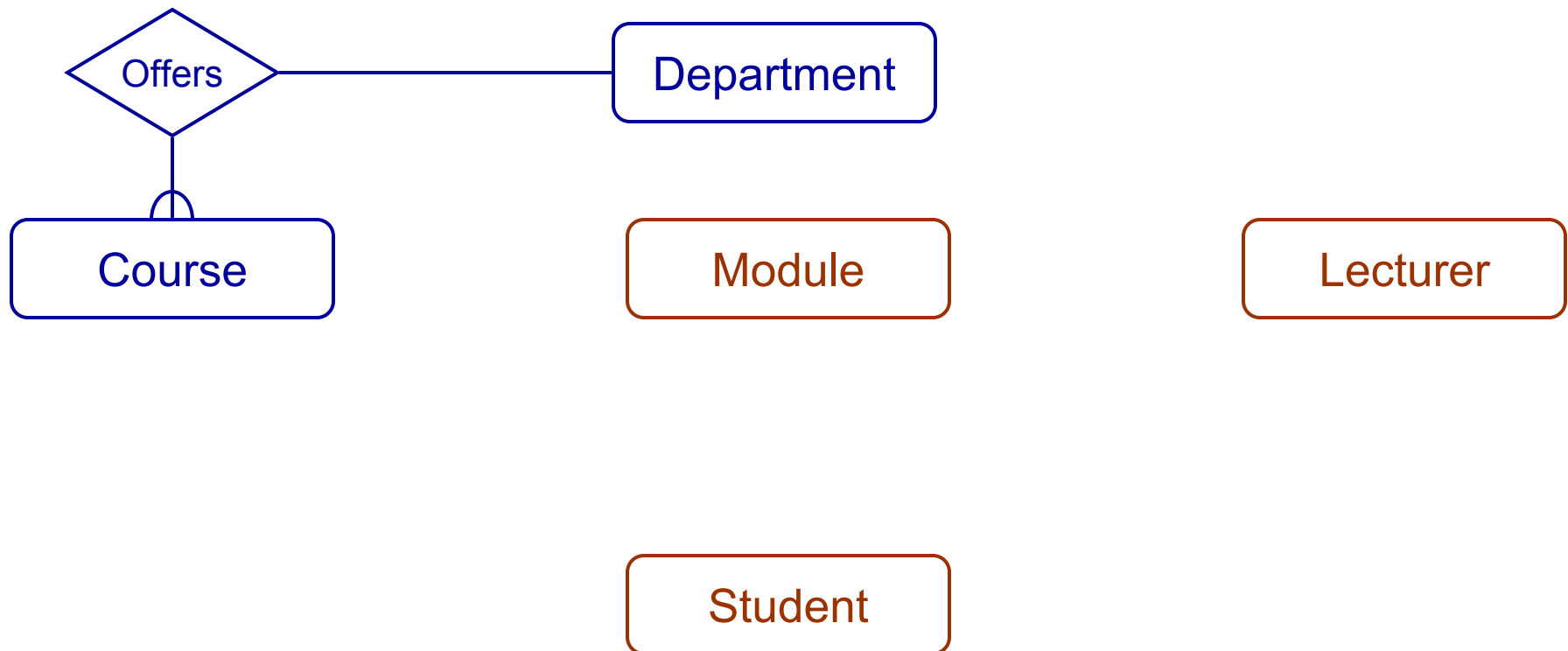
Module

Lecturer

Student

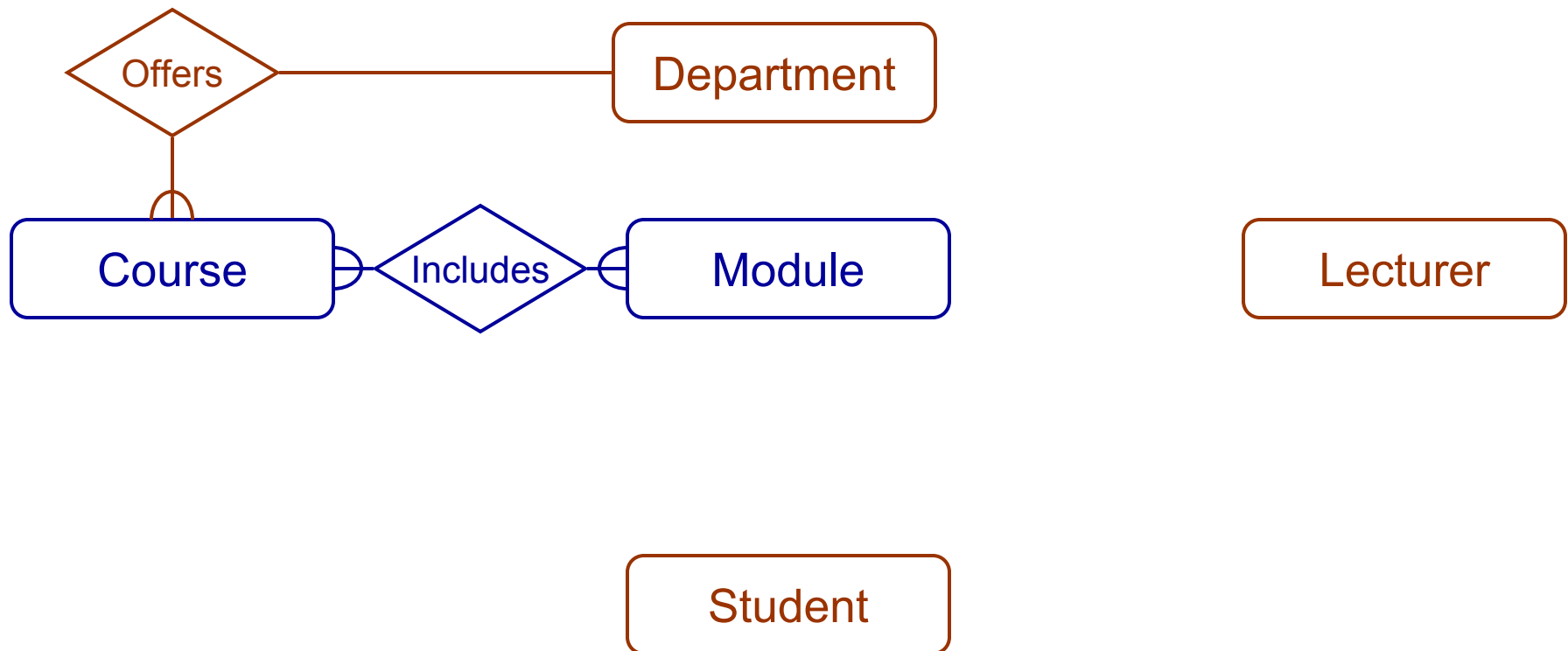
Example - E/R Diagram

Each department offers several courses



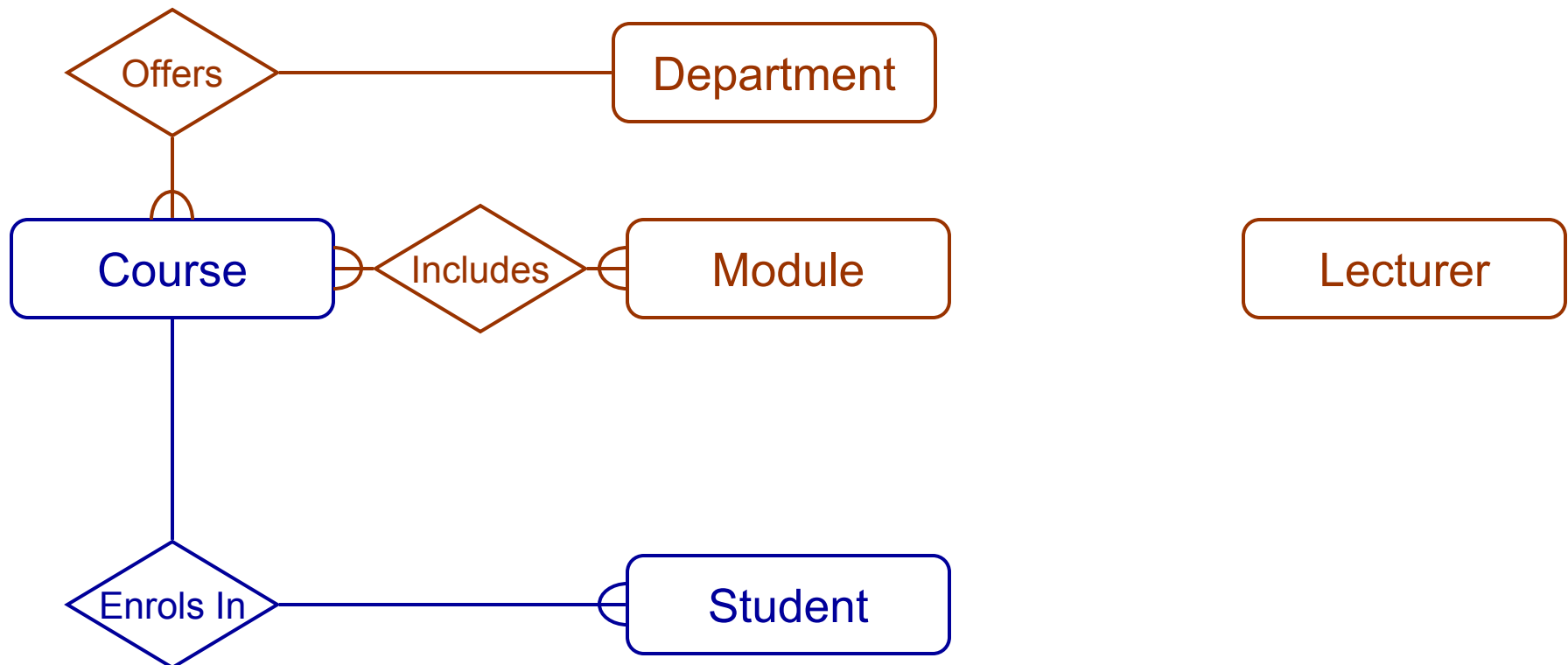
Example - E/R Diagram

A number of modules **make up** each courses



Example - E/R Diagram

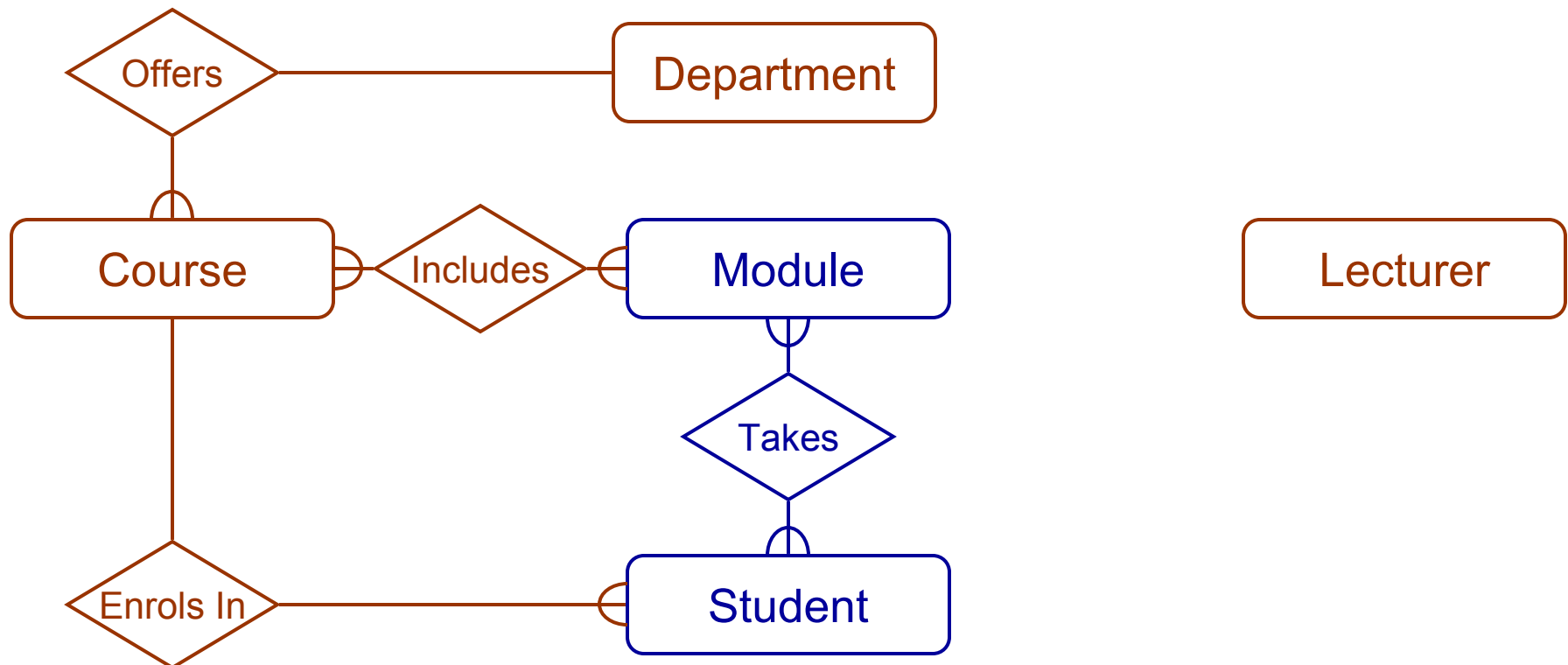
Students **enrol** in a particular course



Entity Relationship Modelling

Example - E/R Diagram

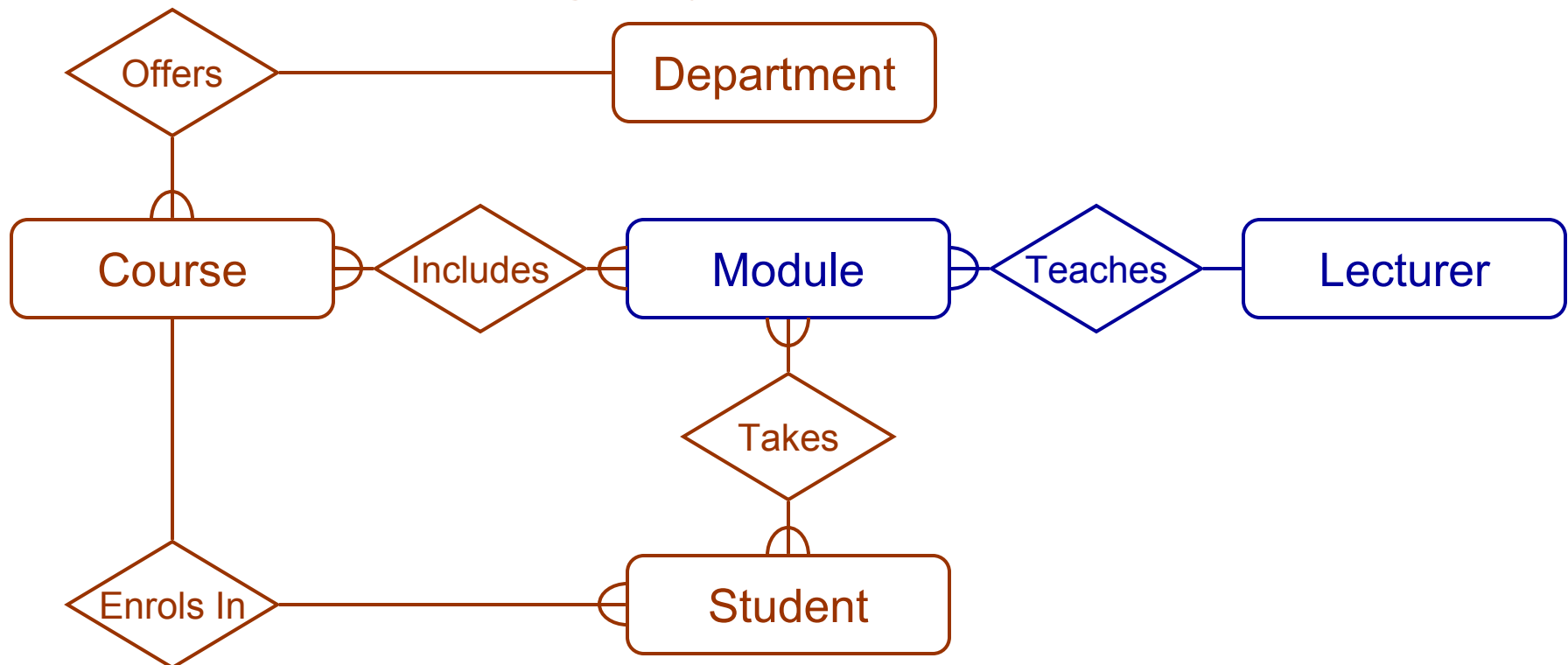
Students ... **take** modules



Entity Relationship Modelling

Example - E/R Diagram

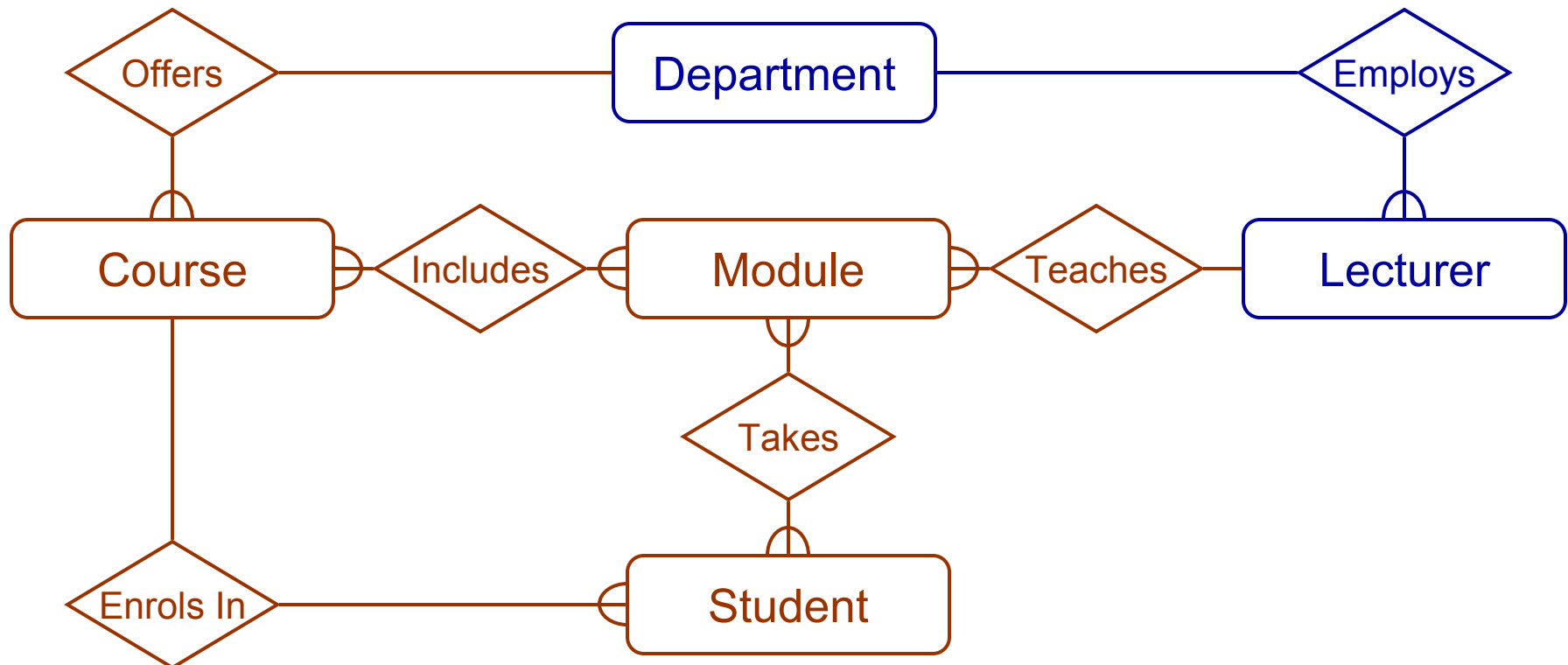
Each module is taught by a lecturer



Entity Relationship Modelling

Example - E/R Diagram

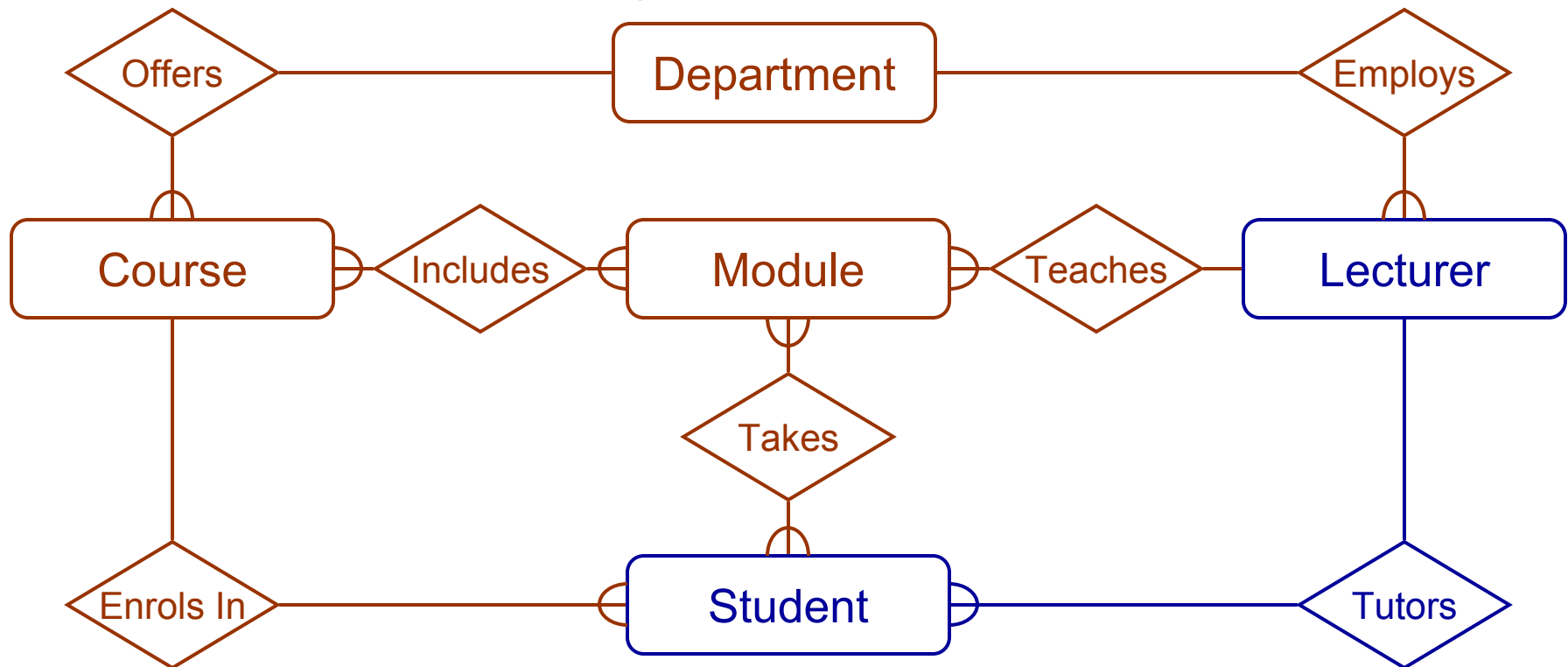
a lecturer from the appropriate department



Entity Relationship Modelling

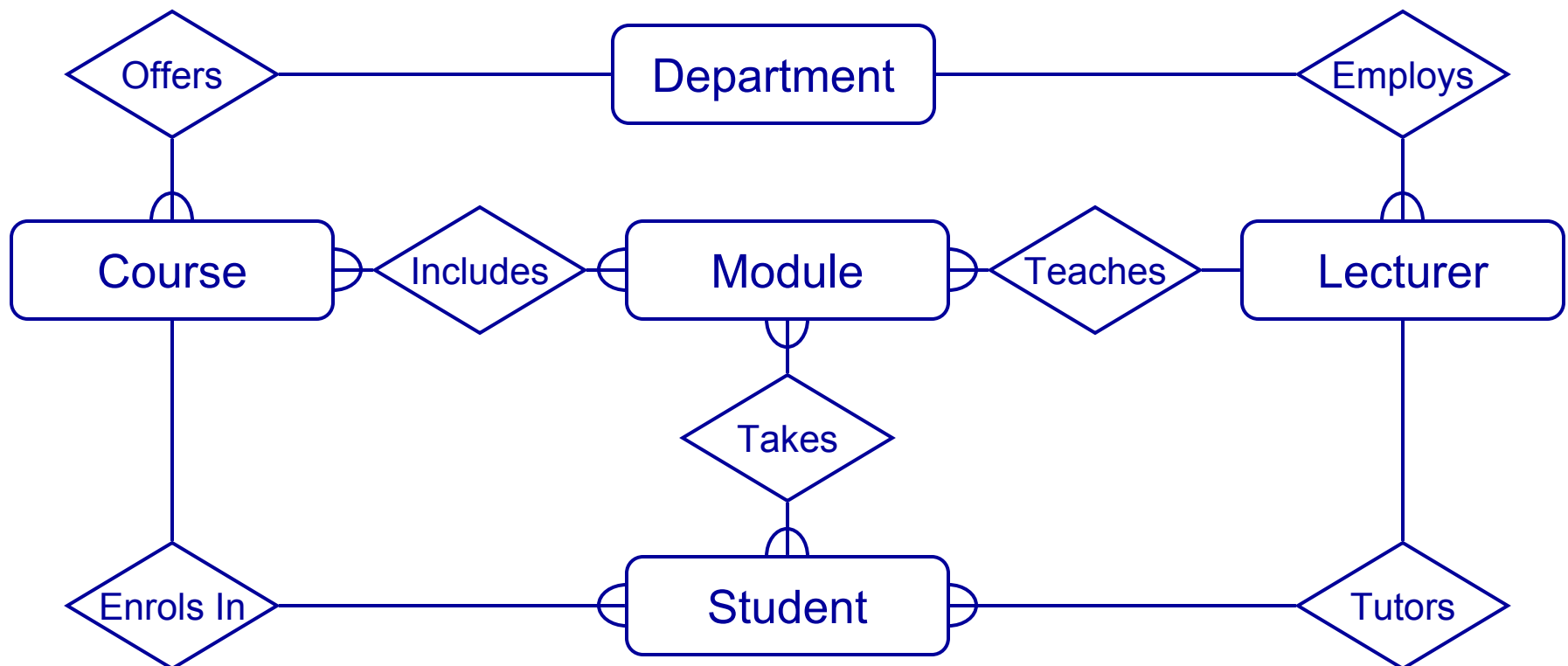
Example - E/R Diagram

each lecturer **tutors** a group of students



Entity Relationship Modelling

Example - E/R Diagram



Entity Relationship Modelling